# Graduation citation

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Bachelor of Biotechnology Innovation (Hons) QUT

**Thesis title:**
Recombinant protein production using a *Tobacco yellow dwarf virus*-based episomal expression vector: control of Rep activity.

**Supervisors:**
Dr Doug Becker (Principal)
Associate Professor Rob Harding (Associate)
Distinguished Professor James Dale (Associate)

**Citation:**
One of the major limitations of using genetically modified plants as bioreactors for the production of high value recombinant proteins for pharmaceutical or industrial purposes is the low yield of expressed proteins. In this project, a virus-based protein expression system was optimised which resulted in 74-fold higher recombinant protein expression levels compared to non-virus-based systems.

The virus-based protein expression technology used in this study offers activatable, high-level expression of recombinant proteins in plants. In addition to its use as a recombinant protein expression platform, the system may also have utility for providing resistance against geminiviruses in plants. This group of viruses cause a range of economically important plant diseases worldwide for which there are no effective control measures available.